LANGUAGE :	**ENGLISH GB**	**X**
	GERMAN D	
	FRENCH F	
	DANISH DK	
	SWEDISH S	
	FINNISH FIN	
	DUTCH NL	
	ITALIAN I	
	SPANISH E	
	RUSSIAN	

MANUAL No. 08002.0621

Machine : Rotary valve, NRSZ4, -10, -20, -30 & NRSZ3

Art. no.: 74004.xxx, 74010.xxx, 74020.xxx, 74030.xxx & 399012.x95

Content

Declaration : 74004.xxx, 74010.xxx, 74020.xxx, 74030.xxx & 399012.x95	
Safety Instruction:	**Cat.20/Tab.05.51/06.01-06.02**
Packing / Transportation Manual:	**Cat.20/Tab.06.21/04.01**
Installation Manual:	**Cat.20/Tab.06.21/05.01-05.02**
User Manual:	**Cat.20/Tab.06.21/07.01-07.02**
Maintenance Manual:	**Cat.20/Tab.06.21/08.01-08.03**
Spareparts List:	**Cat.20/Tab.06.21/09.01-09.02**
Demounting Manual:	**See Maintenance Manual**

Producer : Dantherm Filtration A/S , Assens, DK 9550 Mariager, Denmark.

Decla004GB-C

EC Declaration of Conformity for Components

(Directive 98/37/EC, Annex II, B)

Manufacturer : Dantherm Filtration A/S

Address : Industrivej 13, Assens,

DK-9550 Mariager Tel. +45 99 68 09 00

herewith declares that

Type : Rotary Valve type NRSZ3

Art. No. : 399012.x95

Order No. :

Serial No. :

Production year :

- is intended to be incorporated into machinery or to be assembled with other machinery to constitute machinery covered by Directive 98/37/EC, as amended;
- does therefore not in every respect comply with the provisions of this directive;
- does comply with the provisions of the following other EEC directives:

73/23/EEC, 89/336/EEC & 94/9EC

and that

- the following (parts/clauses of) harmonized standards have been applied:

EN 50082, EN 50081, EN 60204.1 & EN60947.1 & EN1127-1

- the following (parts/clauses of) national technical standards and specifications have been used:

VDI 2263 & CSN 136661

- the component is certified according to:

N.B 1026 has in certificate FTZU 02 ATEX 0252 allowed Pred. Max 1,2 bar, zone 20 inside the component and Kstmax 30MPa.m/s. The component shall be marked

CE 1180 ⟨Ex⟩ II D St2 80°C

and furthermore declares that it is not allowed to put the machinery into service until the machinery into which it is to be incorporated or of which it is to be a component has been found and declared to be in conformity with the provisions of Directive 98/37/EC and with national implementing legislation, i.e. as a whole, including the machinery referred to in this declaration.

Mariager 1/7 - 2005

Klaus Binet
Product Manager

Decla005GB-C

EC Declaration of Conformity for Components

(Directive 98/37/EC, Annex II, B)

Manufacturer : Dantherm Filtration A/S

Address : Industrivej 13, Assens,

DK-9550 Mariager Tel. +45 99 68 09 00

herewith declares that

Type : Rotary Valve type NRSZ 4, NRSZ 10, NRSZ 20 & NRSZ 30

Art. No. : 74004.xxx & 74010.xxx & 74020.xxx & 74030.xxx

Order No. :

Serial No. :

Production year :

- is intended to be incorporated into machinery or to be assembled with other machinery to constitute machinery covered by Directive 98/37/EC, as amended;
- does therefore not in every respect comply with the provisions of this directive;
- does comply with the provisions of the following other EEC directives:

  73/23/EEC, 89/336/EEC & 94/9EC

and that

- the following (parts/clauses of) harmonized standards have been applied:

  EN 50082, EN 50081, EN 60204.1 & EN60947.1 & EN1127-1

- the following (parts/clauses of) national technical standards and specifications have been used:

  VDI 2263 & CSN 136661

- the component is certified according to:

  N.B 1026 has in certificate FTZU 02 ATEX 0252 allowed Pred. Max 0,9 bar, zone 20 inside the component and Kstmax 20 MPa.m/s. The component shall be marked

  CE 1180 ⟨Ex⟩ II D St I 80°C

and furthermore declares that it is not allowed to put the machinery into service until the machinery into which it is to be incorporated or of which it is to be a component has been found and declared to be in conformity with the provisions of Directive 98/37/EC and with national implementing legislation, i.e. as a whole, including the machinery referred to in this declaration.

Mariager 1/7 - 2005

Klaus Bihlet
Product Manager

NF2000 - SAFETY REGULATIONS

Disregarding Dantherm Filtration safety regulations entails a heavy safety risk.

Maintenance.

Maintenance must be performed to Dantherm Filtration maintenance instructions.

Open fire, sparking or some other form of heat generation such as: Welding, grinding, drilling / boring or smoking, etc. may not take place closer than 3 metres to filters etc. working with an explosive atmosphere, such as dust laden air.

It must be ensured that cleaning is performed on and around filters etc. to prevent fire and explosive dust waste from igniting and causing heavy damage.

To prevent generation of static electricity in the filter system, it must be ensured that the filter and the connected ducts etc. are duly earthed.

Maintenance work may not be started until the total system has been stopped in a correct manner, and until the power supply has been cut in a safe manner, for instance by locking the main switch.

Inspection of the filter hopper section by opening the inspection doors at the gable ends may not be performed until the filter air flow has been thoroughly reversed, and the hopper section emptied of material. In this connection, it must be checked whether the reversed air flow has been adequate by examining the residual dust settlement on the filter bags.

Inspection by opening inspection doors and similar may only be performed when personal safety equipment, adapted to the conditions, is used.

If a movable ladder is used for the work, it must be secured correctly for stability before commencing the work.

Service and Repair.

Service and repair may be performed by specially trained staff only.

Before starting any work, the energy supply must be switched off at the main switch, and it must be ensured that any unintended restarting cannot occur, for instance by locking the main switch. Accumulated energy, such as in compressed air system, must also be switched off, possibly discharged altogether, before commencing the work.

For service and repair work making it necessary to be in dust laden air, for instance in the filter hopper section, the following safety equipment must be used:

1 Respiratory Protective Device, possibly with fresh air supply.

2 Goggles, possibly a screen mask in connection with fresh air supply.

3 Fire-Retardant Suit.

4 Fire-Retardant Working Gloves.

5 Safety Footwear.

6 Safety Helmet.

7 Non-Sparking Tools wherever possible.

Inspection of the filter bags when staying at the filter top after opening of the explosion relief doors may be performed only when the filter system has stopped.
For this purpose, the personal safety equipment referred to above must also be used.

If the filter or similar is cleaned by a vacuum cleaner, protection must be established against static electric charging in the suction arrangement.

Boring of holes in filter housing or adjoining pipe ducts may be made only when the system has stopped and been cleaned, while taking great care and without heat generation.

If any fault(s) should occur in the electric system, stopping the system, and restart is disconnected, the faulty component may not be removed to allow for further operation. Proper troubleshooting and repair must be performed before restarting.

Disposal of replaced components, dust/waste from cleaning, as well as other waste, must be performed to the guidelines for the particular materials. These guidelines have normally been established by the local authorities. In case of doubt, the person responsible for company safety must be consulted.

PACKING/SHIPPING/TRANSPORT INSTRUCTION

for Rotary Valve type NRSZ.

Rotary valve type NRSZ is packed on a wooden pallet.

Pallet 800 x 1200 is used for NRSZ 3, NRSZ 4 and NRSZ 10

Pallet 600 x 2000 is used for NRSZ 20 and NRSZ 30

Type	Weight / kg	Dimensions LxWxH
NRSZ 3	37	1200x 800x 600
NRSZ 4	90	1200x 800x 600
NRSZ 10	125	1620x 800x 600
NRSZ 20	200	2670x 600x 600
NRSZ 30	275	2670x 600x1000

The above weights are incl. packaging.

Transport can be carried out using normal pallet handling equipment. When using a crane lift, the lifting strap must be fastened carefully at least two flange holes at each end.

Despatch may be effected by all means of transport normally used. For sea carriage, supplementary protection should be considered.

MOUNTING INSTRUCTION for Rotary Valve type NRSZ

Before any kind of activity, the NF FILTER 2000 or NF 10 SAFETY REGULATIONS must be read carefully, and the safety regulations must be strictly adhered to.

The rotary valve is certified for use as explosion pressure isolation. The actural dust and pressure shall be inside the specifications for the rotary valve. For further info, see the data sheet, the declaration and the ATEX guidelines.

The rotary valve is mounted by fastening to material inlet and material outlet to the square flanges of the rotary valve. If inlet/outlet do not have sufficient stability for the normally occurring loads from the rotary motion of the rotary valve, including start-up, additional stiffening should be made. These stiffening must be fastened to the flanges.

When mounting inlet and outlet, avoid jutting edges, flats, and similar which may inhibit the free material flow.

The placing of the rotary valve appears from a plant view plan, allowing for servicing to be performed, including dismantling of motor and rotor, and allowing for power connection to be made.

When placing in places at the risk of inadequate cooling of the electric motor, another placing should be considered, external cooling established, or special thermal protection considered.

Connect the electric motor of the rotor valve according to the power current regulations in force and make earthing.

As long as the rotary valve is not connected both at the material inlet side and at the material outlet side, it must not be possible to set the rotary valve into operation.

During operation, it may be appropriate for the rotary valve to rotate in a fixed direction but normally this is without any importance. The rotation direction used during test is preferred subsequently. By reverse rotation direction the rubber lips may freeze the rotary valve.

When putting into operation, check ampere consumption.

After completing mounting, check that there is an electric connection between material inlet and material outlet so that no static electricity can arise.

As the rotary valve contains mechanically movable parts, all components connected must prevent personal contact with the rotary parts. As an example, the following must be met:

All joints up to 1 metre from the rotary valve may only be taken apart by tools (flange connections meet this requirement).

Access doors may only be opened by tools.

The connected controller must ensure the stopping of the rotary valve type NRSZ if an explosion occurs.

USER INSTRUCTION for Rotary Valve Type NRSZ

Before any kind of activity, the NF FILTER 2000 or NF 10 SAFETY REGULATIONS must be read carefully, and the safety regulations must be strictly adhered to. If any deviations are made from the safety regulations, this may cause serious personal injury. Before restarting, guards, hatches/doors etc. must be closed/reestablished.

Your rotary valve is produced by:

Dantherm Filtration A/S
Assens
DK-9550 Mariager
Denmark

Phone +45 99 68 09 00

Rotary valve type NRSZ is designed to be incorporated as a part element of a complete material transport system.

Operation, such as start/stop of the rotary valve, does not occur in normal working situations. The rotary valve will normally be controlled by a central control system for the material transport system of which the rotary valve forms part.

Troubleshooting Assistance:

All troubleshooting and fault remedying activities may by performed by skilled competent staff only, with knowledge of the plant function and build-up.

Safety regulations NF FILTER 2000 or NF 10 should be read before commencing activities, and be observed during performance.

Before restarting, all guards, doors/hatches, etc. must be reestablished.

The rotary valve must be examined carefully after an evt. explosion / fire. If the rotary valve is not completely without damages and without visible changes, the rotary valve must be changed in order to preserve the security level.

Fault	Possible Cause	Activity Proposal
Rotary valve disconnecting thermally	* Jammed tramp material	* Remove tramp material
	* Rotor frozen	* Thaw outside with hot air/water
	* Gear motor faulty	* Replace gear motor
	* Rotor faulty	* Replace rotor
	* Thermal protection preset wrongly	* Adjust thermal protection
	* Fuse faulty	* Replace fuse
	* Large voltage drop in power supply	* Replace cables to larger square
Rotary valve	* Operating switch off	* Stop system, switch not running on operating switch
	* Thermal protection thermally	* See under fault: Thermally disconnected
	* Condition for operation not met in control system	* Examine why condition not met
	* Fuses faulty	* Mount fuses
Rotary valve making "screeching" sound	* Jammed tramp material	* Remove tramp material
	* Rotor/rotor housing faulty	* Replace faulty parts
Material cannot pass valve without accumulation	* Material volume per time unit larger than planned in periods	* Reduce material volume supplied, e.g. at chain filters
		* more frequent regeneration
		* briefer step interval on chain conveyor
	* Air flow opposite through rotary valve easily obstructing material passage	* Replace tightening lamellas
	* Material fall velocity less than anticipated	* Adjust production machine so as to change material
	* Material collecting in tufts, lumps which cannot pass	* Adjust production machine so as to change material
	* Material not being removed quickly enough at rotary valve outlet side	* Check emptying system function

MAINTENANCE INSTRUCTION for Rotary Valve type NRSZ

Before any kind of activity, the NF FILTER 2000 or the NF FILTER 10 SAFETY REGULATIONS must be read carefully, and the safety regulations must be strictly adhered to.

If any deviations are made from the safety regulations, this may cause serious personal injury. Before restarting, guards, hatches/doors etc. must be closed/reestablished.

The following elements are to be maintained regularly at the intervals stated. The briefest interval shall apply. If any wear or similar is found, the faulty parts must be replaced.

Maintenance:	Monthly/Operating Hours Interval	
Clean gear motor of any dust encrustation and similar	1	500
Fill up the grease chamber *	2	500
Check rotor housing, shaft seal, etc., outside and motor bracket for wear, etc.	6	1,000
Check rotor housing inside for wear, tramp material, and similar	2	1,000
Check rotary valve (lamellas, shaft, etc.) for wear and similar	2	1,000
Check and grease rotary valve bearings *	6	1,000
Check gear motor for oil waste	6	1,000
Check connected transport pipes for wear and similar	6	1,000

* A more detailed maintenance instruction is found on the following pages.

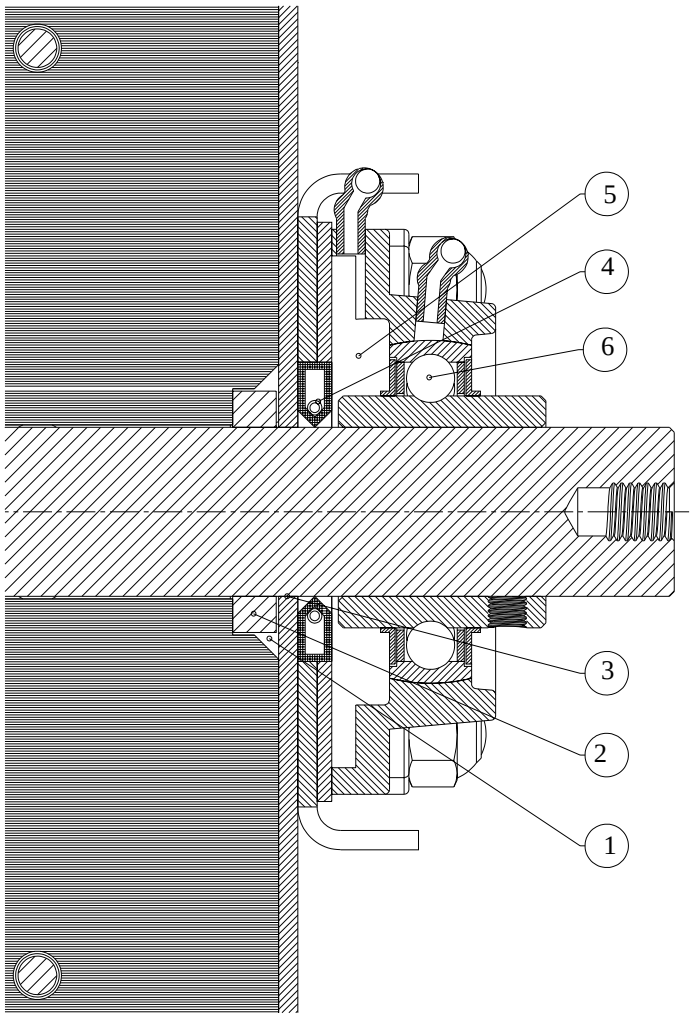
Rotary valve type NRSZ 4, -10, -20 and -30

Filling up the grease chamber:
See figure 1, point 5.
Between the bearing and the end plate of the rotary valve there is a chamber which when filled up with grease prevents dust from getting into the surroundings. The chamber is filled via the lubricator nipple near the end plate of the rotary valve. Castrol LM Grease can be used.

Greasing of Rotary Valve Bearings:
The bearings are supplied greased with CASTROL LM Grease.
Regrease with the same or a similar grease type.

Gear Motor:
The gear motor is lubricated for life and demand no further maintenance. In case of oil waste the gear motor must be changed.

Figure 1.



Changing the rubber lamellas in the rotary valves type NRSZ

Pull out the rotor from the rotary valve when changing the rubber lamellas and the end sealing plate. In connection with the mounting af the new rubber lamellas, all screws must be placed in the holes, before fastening. Check that the lamellas are secured to the shaft.

Dismantling

Dismantling may be performed after an external lift (for instance a crane) has been established, and the rotary valve has been cleaned inside of toxic, explosive or otherwise dangerous material.

After cleaning, the rotor valve consists of steel, rubber, copper, lubricant, plastic, and paint.

LIST OF SPARE PARTS for Rotary Valve type NRSZ

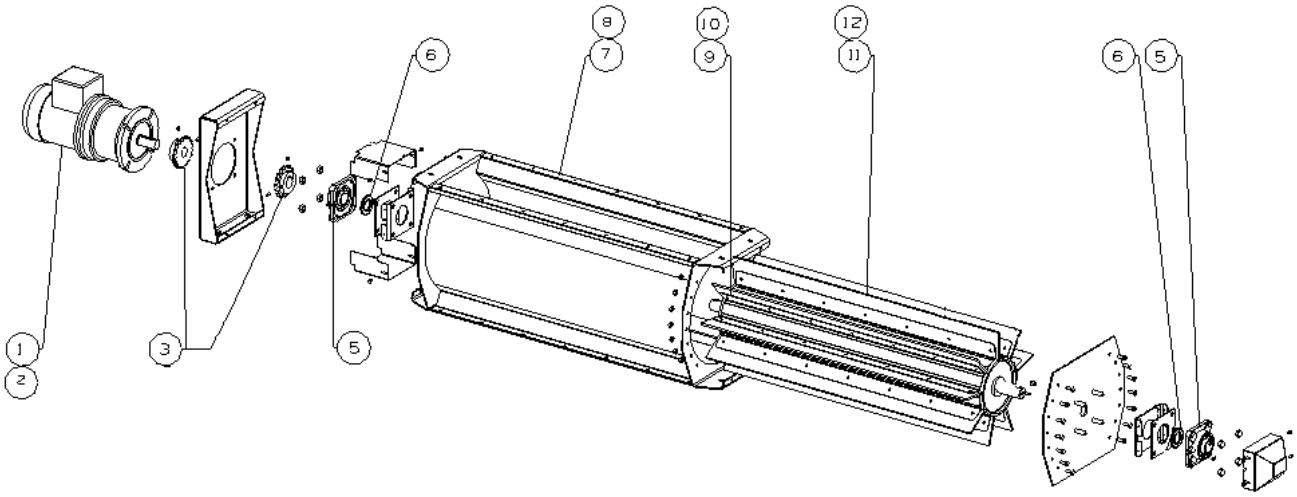
NRSZ-4, 10, 20 and 30 delivered since the late summer 1997.
The first ones with Motovario gear motor: Prod. No. 1710
The first ones with UCF 207 ø35 bearings Prod. No. 1790

Pos.	Item no.	Text
1		Gear motor. Depends on type and zone. See data sheet for NRSZ rotary valve.
2		Gear motor. Depends on type and zone. See data sheet for NRSZ rotary valve.
3	70011.005	Clutch complete NRSZ4 / NRSZ10
5	70000.190	Bearing UCF 207 ø35
6	18160.035	Gaco ring ø35x62x7
7	70004.100	Rotor housing NRSZ4
8	70010.100	Rotor housing NRSZ10
9	74004.700	1 set rubber lamella for NRSZ4 (max. 50°C) *
10	74010.700	1 set rubber lamella for NRSZ10 (max 50°C) *
11	74004.016	Rotor NRSZ4, with rubber (max 50°C) *
12	74010.016	Rotor NRSZ10, with rubber (max 50°C) *

* Option – rubber max. 80°C.

Pos. refer to figure 2.

Figure 2



NRSZ rotary valves

Pos.	Item no.	Text
41		Gear motor. Depends on type and zone. See data sheet for NRSZ rotary valve.
42	18160.001	Gaco ring ø25-ø42-7 (3 pcs.)
43	399012.030	Rotor complete include rubber lamellas (max. 50°C)*
44	399012.090	1 set rubber lamells (9.pcs.). Max. 50°8C *
45	399012.075	Rubber enclosure for rotor
46	399012.055	Steel section between lamella
47	399012.070	House for Gaco ring

*Option: rubber 80°C

Pos. refer to figure 3.

Figure 3